

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jason Fokens on December 28, 2009.

The application has been amended as follows:

Claim 1 (amended): A method of manufacturing a rigid foam board consisting essentially of:

incorporating nano-particle[s] nucleating agents into a polymer melt, said nano-particle[s] nucleating agents being selected from [calcium carbonate,] intercalated graphites and expanded graphites and having a particle size in at least one dimension of less than 100 angstroms;

incorporating a blowing agent into the polymer melt under a first pressure and at a first temperature;

extruding the polymer melt under a second pressure and at a second temperature, the second pressure and second temperature being sufficient to allow the polymer melt to expand and form a foam board having a solid foam structure; and

cooling the foam board, said foam board having an average cell size between 60 μm and 120 μm and having a cell size distribution;

wherein said polymer melt includes an alkenyl aromatic polymer material;

wherein no nucleating agents other than said intercalated graphites and expanded graphites are incorporated into the polymer melt; and

wherein at least 90 percent of the cells in the rigid foam board having a solid foam structure are closed cells.

Claim 10 (amended): A method of manufacturing a rigid foam board according to claim 2:

wherein the nano-particle[s] nucleating agents are incorporated into the polymer melt at a rate between 0.01 and 10 weight percent, based on polymer weight.

Claim 11 (amended): A method of manufacturing a rigid foam board according to claim 2:

wherein the nano-particle[s] nucleating agents are incorporated into the polymer melt at a rate between 0.5 and 5 weight percent, based on polymer weight.

Claim 13 (amended): A method of manufacturing a rigid foam board according to claim 10:

wherein the nano-particle[s] nucleating agents are formed by a technique selected from intercalation with polystyrene and exfoliation of expandable graphite particles in a polystyrene or polymethyl methacrylate matrix.

Claims 1-8 and 10-15 are allowed. The following is an examiner's statement of reasons for allowance: the prior art of record does not teach or suggest a method of manufacturing a rigid foam board having a solid foam structure including incorporating nano-particle nucleating agents selected from intercalated graphites and expanded graphites and having a particle size in at least one dimension of less than 100 angstroms into a polymer melt, wherein the cell size

formed within the foam board is between 60 μm and 120 μm , wherein no nucleating agents other than said intercalated graphites and expanded graphites are incorporated into the polymer melt, and wherein at least 90 percent of the cells in the foam board are closed cells, in combination with the other features instantly claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Wollschlager/
Primary Examiner
Art Unit 1791

January 5, 2010